



**STATE OF MONTANA
MONTANA DEPARTMENT OF TRANSPORTATION
JOB PROFILE**

☒
☐

Update
Formal Review

Date Submitted _____

SECTION I - Identification

Working Title: Drafter

Department: Transportation

Job Code Number: 173113

**Division & Bureau: Engineering Division
Highways Bureau**

Job Code Title: Drafter

Section & Unit: Road Design Section

Pay Band: 3

**Work Address: 2701 Prospect Avenue
Helena, MT 59620**

Position Number: 93201

Phone: 444-6225

☐ FLSA Exempt ☒ FLSA Non-Exempt

☐ Non-Union ☒ MPEA ☐ Blue Collar

Profile Completed By: Scott Keller, MSU Design Eng.

Work Phone: (406) 994-1843

Work Unit Mission Statement or Functional Description:

The Highways Bureau is responsible for all aspects of the development and design of highways. It includes the Hydraulics Design Section, the Consultant Design Section, and the Road Design Section.

The Road Design Section is responsible for the assembly of the road plans package, which is the major part of the development of all highway projects in the Department of Transportation. Compiling the road plans package entails the proposal and evaluation of alternates, computation of geometric data, estimating of the plan quantities, assembly of the plan sheets, and writing of specifications needed to build highways on the Secondary, Primary and Interstate Highway.

Describe the Job's Overall Purpose:

The employee in this position works on a design unit within the road design section. His/her duties consist of primarily preparing contract documents (plan sheets, details, and cross sections) used for the construction of highway projects.

SECTION II - Major Duties or Responsibilities	% of Time
--	------------------

A. Develops Documentation, Plan Sheets, and Details	40%
--	------------

1. Prepares plan sheets in accordance with industry practice, departmental and bureau standards for technical drawings.
2. Develops detail sheets from interpreting engineering design calculations and hand-drafted sketches in sufficient detail so that contractors and inspectors alike are aware of the design intent.
3. Develops engineering calculations and required documentation to produce bid quantities for incorporation into roadway plan sheets.

B. Reviews and Revises Calculations, Plan Sheets, and Details	30%
--	------------

1. Reviews and revises as a consequence of checking, plan sheets and details prepared by self or others.
2. Reviews details and engineering design calculations for accuracy.
3. Checks calculations and design documentation developed by others.

C. Develops Cross Sections and Plan Details From Survey Notes and Other Data.	30%
--	------------

1. Analyzes survey data and miscellaneous design input from other bureaus or sections and prepares cross sections showing major design elements.
2. Coordinates miscellaneous design input from other sources to develop plan details.
3. Develops bid quantities from cross sections and other design data prepared by self or others.

2. <i>Specific examples of problems solved, decisions made, or procedures followed when performing the most frequent duties of this position include:</i>
--

Work is assigned to the incumbent by the design supervisor and is received in the form of field survey notes and data sheets, design calculations, sketches and/or verbal instruction. Completed details, cross sections, and plan sheets are developed from this information.

3. <i>The most complicated aspect of this position is:</i>

Following the MDT standards and procedures to produce consistent plan sheets and details.

4. Guidelines, manuals, or written procedures that support this position include:

MDT Road Design Manual, Latest edition of Standard Specifications for Road and Bridge Construction, Detailed Drawings, and MDT CADD Standards.

5. The following duties and/or specific tasks listed under 1 above are considered “essential functions” because they require specialized expertise and skill and are the primary reasons the job exists (they must be performed by this position with or without accommodations):

The following duties are considered essential functions for this position:

1. Prepares plan sheets in accordance with standards for technical drawings.
2. Develops detail sheets from design calculations and hand-drafted sketches.
3. Develops engineering calculations and required documentation for bid quantities.
4. Reviews and revises plan sheets and details.
5. Reviews details and engineering design calculations for accuracy.
6. Checks calculations and design documentation.
7. Analyzes survey data and miscellaneous design input to prepare cross sections.
8. Coordinates miscellaneous design input to develop plan details.
9. Develops bid quantities from cross sections and other design data.

The following mental and physical demands are associated with these essential functions:

PHYSICAL

- Work is performed in a controlled, comfortable office setting.
- Lifting objects (such as files or as-built plans) up to 20 pounds.
- Remaining seated for extended periods of time, with occasional walking, standing, and bending.
- Short travel for training, meetings, and conferences.
- Lifting documentation files or plans and filing correspondence in files.

MENTAL

- Ability to multi-task.
- Operate a computer, calculator, and other office equipment.
- Demands for accuracy in all aspects of work
- Ability to meet deadlines.
- Comparing data.
- Copying or transcribing data.
- Computing arithmetic, geometric, and trigonometric operations.

- Compiling information and organizing it into a logical format.
- Analyzing survey data and other design input data.
- Communicating effectively in both oral and written communications.

6. **Does this position supervise others?** ☐ Yes ☒ No

Number directly supervised:

Complexity level of the positions supervised:

Position Number(s) of those supervised:

7. **This position is responsible for:**

- ☐ Hiring ☐ Recommends Termination ☐ Supervision ☐ Pay Level
☐ Performance Management ☐ Promotions ☐ Discipline
☐ Other:

8. **Attach an Organizational Chart.**

SECTION III - Minimum Qualifications - List minimum requirements for the first day of work.

Critical knowledge and skills required for this position:

KNOWLEDGE:

Knowledge of the principles and methods of CADD drafting and surveying usually obtained in the first year of college or other technical training. Familiar with highway plans, specifications, and design standards for Interstate, Primary, Secondary and County Roads. Knowledge of engineering mathematics, especially trigonometry and geometry.

SKILLS:

Skill in the use of engineering office instruments, computers, and CADD software.

Behaviors required to perform these duties:

COMMUNICATION

Speaks effectively and in an organized manner in order to communicate messages and ideas.

CREATIVITY AND PROBLEM SOLVING

Uses basic experience to solve problems; is open-minded; determines what sources of information are available to expand abilities to do the work and to improve work methods; asks questions.

CUSTOMER ORIENTATION

Assumes responsibility for an appropriate level of customer service; builds good relationships by encouraging others to express viewpoints; shows respect through active listening.

DECISION MAKING

Identifies opportunities; commits to and makes decisions; acts within appropriate time frames; assesses a problem and makes decisions using the appropriate set of facts.

ETHICS

Displays integrity by holding oneself personally accountable; acts in accordance with standards for ethical judgment consistent with the organization's stated values; accepts responsibility; demonstrates respect for all team members regardless of individual capabilities, agendas, opinions or needs; gains the confidence of employees and customer by respecting the confidentiality and privacy of their concerns and needs.

FLEXIBILITY AND ADAPTABILITY

Reacts to change without disruption to others; routinely exhibits adaptability.

LEADERSHIP

Gives basic directions and instructions and makes sure group has all necessary supplies and information.

PERSONAL ACCOUNTABILITY AND OWNERSHIP

Learns from past experiences; remains positive about work; takes pride in job; strives for excellence.

TEAMWORK

Participates in group discussions and respects the opinions of others; considers co-worker workload when volunteering or requesting assistance.

Education:

Check the one box indicating minimum education requirements for this position for a new employee the first day of work:

- | | |
|--|--|
| <input type="checkbox"/> No education required | <input type="checkbox"/> Related AAS/2-years college/vocational training |
| <input type="checkbox"/> High school diploma or equivalent | <input type="checkbox"/> Related Bachelor's Degree |
| <input checked="" type="checkbox"/> 1-year related college/voc. training | <input type="checkbox"/> Related Master's degree |

Please specify the acceptable and related fields of study:

Required/Acceptable: Any combination of post high school education in drafting, civil engineering technology, or surveying and technical experience in a civil engineering field equaling one year.

Related:

Other education, training, certification, or licensing required (specify):

Experience:

Check the one box indicating minimum work-related experience requirements for this position for a new employee the first day of work:

- | | |
|---|--|
| <input type="checkbox"/> No prior experience required | <input type="checkbox"/> 3 years |
| <input checked="" type="checkbox"/> 1 year | <input type="checkbox"/> 4 years |
| <input type="checkbox"/> 2 years | <input type="checkbox"/> 5 or more years |

Other specific experience (optional):

Alternative Qualifications:

This agency will accept alternative methods of obtaining necessary qualifications.

☒ Yes ☐ No

Alternative qualifications include:

The minimum amount of job-related work experience is one year. This can be obtained by a combination of education or experience in drafting, civil engineering technology, or surveying and technical experience in a civil engineering field equaling one year.

SECTION IV – Other Important Job Information

Working conditions are good and physical demands are negligible. Mental and emotional demands are moderate and vary with changing deadlines and the complexity and volume of work. Travel is required occasionally, perhaps six times per year, once overnight. Employee does not speak for the agency nor commit the agency to any specific course of action. Undetected errors could cost a substantial amount of money and time or jeopardize the safety of the traveling public. Ordinarily, most or all errors would be discovered at the time of review by the design supervisor, checkers, or Project Design Manager.

Within the road design unit the individual has personal contacts with professional and management personnel to gather information and resolve questions daily.

SECTION V – Signatures

Signature indicates this statement is accurate and complete.

Employee:

Name: _____ Title: _____

Signature: _____ Date: _____

Immediate Supervisor:

Name: Scott A. Keller _____ Title: MSU Design Engineer

Signature: _____ Date: _____

Bureau Chief:

Name: Paul Ferry _____ Title: Highways Bureau Chief

Signature: _____ Date: _____

Division/District Administrator:

Name: Loran Frazier _____ Title: Chief Engineer

Signature: _____ Date: _____

Department Designee:

Jennifer Jensen _____ Administrator, Human Resources Division

Signature: _____ Date: _____